

Indiana Tech Flash

Indiana's Most Comprehensive Electronic Resource For
Engineering & Technology Education.



Special points of
interest:

- 7 Pages of Resources!
- Upcoming Events & Workshops

January 2010

6th Annual Engineering / Technology Education Day



*The
Engineering /
Technology
Educators of
Indiana*

We invite you to participate in the North Atrium of the Indiana State House Rotunda on February 2nd, 2010. This is the premier opportunity for you to help educate the public and elected officials about Engineering and Technology Education in Indiana public schools.

This is a fantastic opportunity for you and your students to speak with legislators in order to help them understand the importance of this program in Indiana schools.



This year we plan to emphasize how engineering and technology education have merged within our state curriculum

as the leader in STEM.

<http://www.doe.in.gov/octe/technologied/conferences.html>

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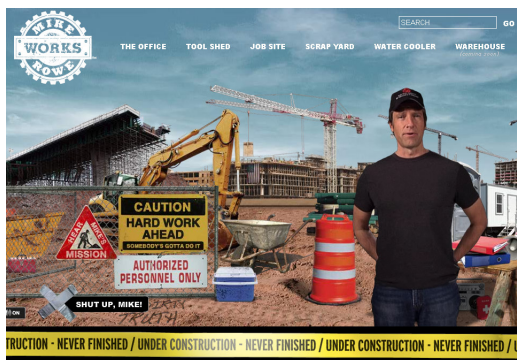
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Upcoming Dates & Events

- FIRST Robotics Kick-off for the 2010 Season (2 Locations: IUPUI & Purdue) - 1/9/2010
- Engineering & Technology Rotunda Day (Indiana State House) - 2/2/2010
- Annual PLTW Student Conference (IUPUI) - 2/12/2010
- World of Wheels Student Career Day (Indianapolis) – 2/12/2010
- Warren VEX Robotics Clean Sweep Qualifier Tournament (Warren Central HS) - 3/13/2010
- ITEA Conference (Charlotte, NC) — 3/18-20/2010
- FIRST Boilermaker Robotics (Lafayette) – 3/18-20/2010
- Engineering Expo: Purdue Student Engineering Foundation (Purdue University) - 3/30/2010
- IMSTEAM Super Mileage Challenge (O'Reilly Raceway Park) - April 26, 2010

Mike Rowe Works Web Site

"Teaching is the profession that teaches all other

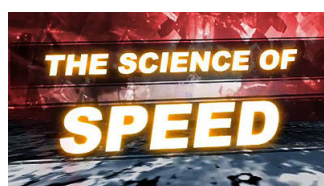


professions." That was quipped by some unknown author back in the day. Well, hats off to that author whoever you were. The positive impact of educators should never

be underestimated. Right along side our family, teachers set us down the road of our own life journey. They give us the tools to think, to process and to solve. We owe

them way more than a shiny red apple. We owe those teachers who made a difference in our lives our thanks and achievement. Fortunately, those two ideas go hand in hand.

<http://www.mikerowe-works.com>



The Science of Speed

You can not win NASCAR races without getting the science right. NSF has partnered with NASCAR in the production of the "Science of Speed", a fast-paced 12-part video series that explains the

scientific principles that are so essential to the NASCAR experience.

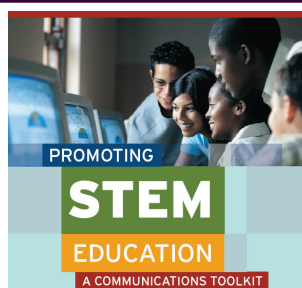
<http://www.nsf.gov/sos/>



Blender 3-D design and animation software

Blender is the free open source 3D content creation suite, available for all major operating systems

<http://www.blender.org/>



The Importance of STEM Education

As governors move this important STEM (Science, Technology, Engineering and

Mathematics) policy agenda forward, they may find that some of their constituents have yet to be persuaded of the need for improvement. Some citizens and stakeholders may fail to grasp the strong link between high-quality STEM education and economic development in the state.

This toolkit provides core messages, materials, and communications strategies to help governors overcome such

challenges and build strong support for STEM education initiatives. 1512. Tel: 202-624-5300; Fax: 202-624-5313; Web site: <http://www.nga.org>

http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/43/2d/67.pdf

Education for Innovation

Dedicated exclusively to understanding how and why students study technology and engineering K-12.

**http://
www.educationforinnov
ation.org/media.html**



2010 West Point Bridge Contest

U.S. students age 13 through grade 12 are eligible for prizes.

Anyone else may enter our Open Competition.

The 2010 contest doesn't begin until February 1, 2010, but you can download the WPBD software and start practicing right now!

Prizes: Each member of the first-place team will earn a \$5,000 scholarship. Each finalist will win a notebook computer.

<http://bridgecontest.usma.edu/>

We believe that everyone, especially children, learn best by doing, rather than passively reading or listening. Whyville's games are therefore designed to rouse curiosity and foster engagement through active participation and critical thinking. In educational parlance, this is called constructivist, inquiry-based learning. In kid terms, it's "learning by doing."

Some of Our Games and Activities



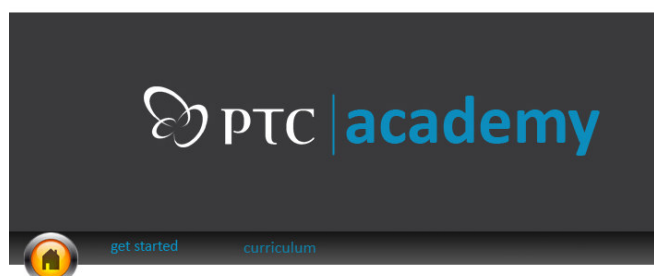
Whyville

WASA is [Whyville](#)'s own version of NASA. In the Zero Gravity Chamber, learn about angles and the principle of Newton's 3rd Law. In the Rocket Design Lab, simulate rockets to test parameters such as nozzle size and pay load.

And in the Ion Engine Lab play 3 games that teach about electric charges and ion engines. The Skater game teaches angular momentum, while

challenging you to answer the question, "How do skaters get spinning so fast?" The Spin Game further extends the skater activity by addressing the issue of rotational axes and symmetries.

**[http://b.whyville.net/
smmk/top/gatesInfo?
topic=games](http://b.whyville.net/smmk/top/gatesInfo?topic=games)**



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worth of **FREE** CAD
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Welcome to the PTC/
Academy learning portal.
Here you will find self
directed and self paced
tutorials to get you started
using your FREE Pro/
ENGINEER Wildfire!

**http://
www.ptcacademy.com/**



VU is committed to broadening the dual credit options available to Indiana students and providing them with opportunities to receive hands-on college experience in career and technical areas. With this in mind, we are pleased to announce that beginning in the Fall of 2009, ***Project EXCEL will waive the tuition fee*** for students enrolled in dual credit courses in select career and technical areas.

http://www.vinu.edu/cms/opencms/academic_resources/project_excel/

NASA makes finding teaching materials easy

NASA's Education Materials Finder will help teachers locate resources that can be used in the classroom. Users may search by keywords, grade level, product type and subject. With hundreds of publications and Web sites indexed, the finder is the best way to locate NASA educational resources.



<http://search.nasa.gov/>



Design and Discovery : Experiencing Engineering Through Design



Design and Discovery

Design and Discovery is an academic enrichment curriculum that engages students in hands-on engineering and design

activities that enhance knowledge, and problem solving skill in the areas of science and engineering.

blocks of time for hands-on activities.

<http://educate.intel.com/en/DesignDiscovery/>

Design and Discovery is most appropriate for informal education settings with extended



Order your free copy of the Design Squad Teacher's Guide!

Design Squad, PBS' engineering reality

competition series, has a new Teacher's Guide. Order your free copy today! Developed for middle school science and technology teachers,

challenges use low cost, readily available materials and are linked to national science and technology standards.

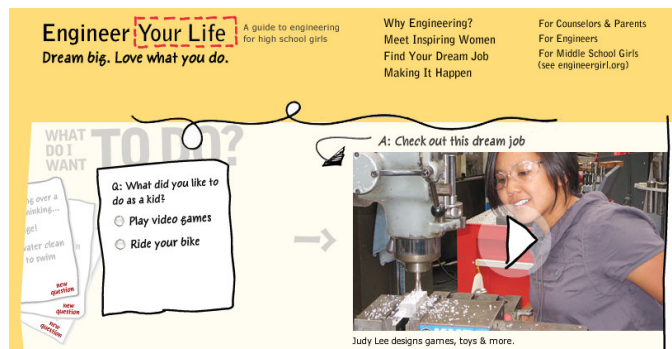
<http://pbskids.org/designsquad/engineers/newsletter.html>

Design Squad's latest guide blends hands-on engineering challenges with 3 core science concepts: Force - students build their own blimps; Electricity - students design electronic games; Sound - students make and play instruments The

Engineer your life

Many people who love being engineers have said that they didn't consider engineering or even know what it was until a school counselor or parent suggested it as a career option.

Sometimes just one adult can make all the difference in helping young people discover their dream jobs.



But advising kids about engineering can be tough if you're not sure what it is yourself.

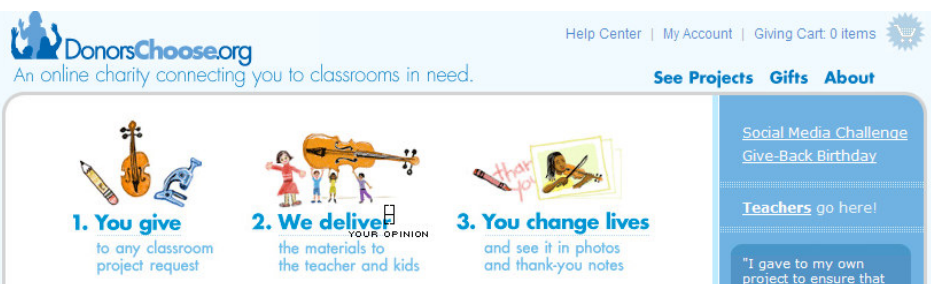
<http://www.engineermylife.org/>



The Virginia Children's Engineering Council (VCEC)

just published their fall 2009 journal. The Children's Engineering Journal (CEJ) focuses on the use and study of technology. The CEJ features articles and instructional ideas about best practices pertaining to the implementation of Design and Technology experiences in grades K-5. Elementary school teachers are encouraged to submit articles.

<http://www.childrensengineering.org/journal/index.html>



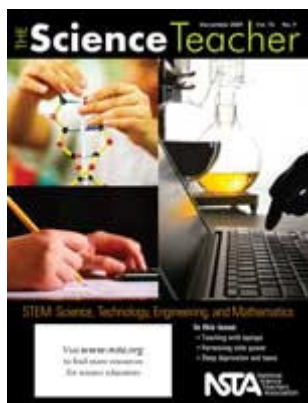
DonorsChoose.org

is a simple way to provide students in need with resources that our public schools often lack. At this not-for-profit web site,

teachers submit project proposals for materials or experiences their students need to learn. These ideas become classroom reality when concerned individuals,

whom we call Citizen Philanthropists, choose projects to fund.

<http://www.donorschoose.org>



December 2009: STEM: Science, Technology, Engineering, and Mathematics

This issue of *Science Class*—an online companion to *The Science Teacher (TST)*, NSTA's journal for high school teachers—is devoted to the theme of science, technology, engineering, and mathematics (STEM), which are increasingly important fields in our world today.

This issue provides ideas for incorporating STEM into the classroom.

Students choose a place to live in a solar-powered motor home, discover two models of laboratory investigation, and use laptops to enhance their science experience. Technology, Engineering, and Mathematics.

http://www.nsta.org/publications/browse_journals

Fisher Green School Experiment!



National Green Week 2010

Calling on all principals: Sign up now for National Green Week 2010 and be eligible for grants, awards and eco-kits!

Green Education Foundation has put together a program (February 1-5, 2010) which includes the largest school based waste reduction event of all time and the largest youth gardening initiative to-date coupled with free environmental lessons and activities. National Green Week 2010 is **free** and will provide educators with environmental curriculum for green assignments, activities and projects that can be seamlessly integrated into science, math, language arts, and creative arts curricula.

<http://www.greeneducationfoundation.org>



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GO FURTHER**
FEDERAL STUDENT AID®

TEACH GRANT PROGRAM

Through the College Cost Reduction and Access Act of 2007, Congress created the Teacher Education Assistance for College and Higher Education (TEACH) Grant Program that provides grants of up to \$4,000 per

year to students who intend to teach in a public or private elementary or secondary school that serves students from low-income families. If you are interested in learning more about the TEACH Grant Program, you should contact the financial aid office at the college where you will be

enrolled to find out if they will participate in the TEACH Grant Program. For a listing of the TEACH Grant eligible institutions, click [here](#).

<http://studentaid.ed.gov/PORTALSWebApp/students/english/TEACH.jsp>



Please be advised that your loans must be with The Federal Department of Education and they may also be able to help consolidate your loans for you.

Public Service Loan Forgiveness Program

As a teacher in a public school or public service job you might be all eligible for the **Public Service Loan Forgiveness Program**.

A **Consolidation Loan** allows you to combine one or more of your federal education loans

into a new loan that offers you several advantages such as one monthly payment, flexible repayment options, and reduced monthly payments. For more details contact the Public Service Forgiveness Program at: Contact 1-800-848-0979

<http://www.finaid.org/loans/publicservice.phtml>



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Federal Perkins "Loan" Cancellations for Teaching in a Designated Subject Shortage Area

This cancellation is based on full-time teaching if there is a shortage of teachers in your subject area. Each year the state education agency

determines any subject shortage areas in the elementary and secondary schools within the state.

Check with your local school system or state education agency to find out if your subject matter area has been so designated. If you teach full time in science,

mathematics, foreign language, or bilingual education, you qualify for cancellation even if the state has not designated one of these subject areas as a shortage area. the "Teacher Shortage Areas" a nationwide listing by content area.

<http://studentaid.ed.gov/PORTALSWebApp/students/english/cancelperk.jsp>

INDIANA SUPER MILEAGE CHALLENGE

Mike Fitzgerald
Technology Education Specialist
Indiana Department of Education
mfitzger@doe.in.gov
317-232-6990

It is the policy of the Indiana Department of Education not to discriminate on the basis of race, color, religion, sex, national origin, age, or disability, in its programs, activities, or employment policies as required by the Indiana Civil Rights Law (I.C. 22-9-1), Title VI and VII (Civil Rights Act of 1964), the Equal Pay Act of 1973, Title IX (Educational Amendments), Section 504 (Rehabilitation Act of 1973), and the Americans with Disabilities Act (42 USCS §12101, et. seq.).

Inquiries regarding compliance by the Indiana Department of Education with Title IX and other civil rights laws may be directed to the Human Resources Director, Indiana Department of Education, Room 229, State House, Indianapolis, IN 46204-2798, or by telephone to 317-232-6610, or the Director of the Office for Civil Rights, U.S. Department of Education, 111 North Canal Street, Suite 1053, Chicago, IL 60606-7204



The screenshot shows the Indiana Department of Education website. At the top is the IN.gov logo and a search bar. Below the logo is a navigation menu with links to various departments. The main content area features a video player titled 'Dr. Tony Bennett's Podcast April 3rd, 2009'. The video shows Dr. Tony Bennett speaking. To the left of the video is a sidebar with links to 'DOE HOME', 'STREAMING VIDEO HOME', and 'ABOUT US'. Below the video is a 'Download This Video' button.

The document is titled 'THE VISION' and 'THE PLAN' from the Indiana Department of Education. The vision statement reads: 'The academic achievement and career preparation of all Indiana students will be the best in the United States and on par with the most competitive countries in the world.' The plan is divided into two main sections: 'THE VISION' and 'THE PLAN'. The plan includes a list of goals and strategies for improving student achievement and career preparation.

THE VISION

The academic achievement and career preparation of all Indiana students will be the best in the United States and on par with the most competitive countries in the world.

THE PLAN

1. Create and promote a statewide culture of academic excellence, in which at least:
 - a) 90% of students pass both Math and English/Language Arts sections of ISTEP+ and End-of-Course Assessments;
 - b) 25% of all graduates receive a score of 3, 4 or 5 on at least one Advanced Placement exam, a 4 or higher on an International Baccalaureate exam, or receive the equivalent of 3 semester hours of college credit during their high school years; and
 - c) 90% of students graduate from high school.
- Institute and sustain an emphasis on reading at the elementary level and integrate reading and writing into all content areas to ensure students are able to comprehend and to apply new knowledge across the curriculum and in practical settings.
- Advance learning in the Science, Technology, Engineering and Mathematics (STEM) areas.
- Drive college preparedness by designing and implementing a coherent Advanced Placement (AP) course strategy, including a focus on AP readiness at the middle school level and an aggressive dual-credit strategy.
- Focus on middle school success by ensuring an engaging learning environment that demands academic rigor, begins career preparation awareness and builds upon elementary achievement in basic skills.
- Integrate Title I, English Language Learners (ELL), High Ability and Special Education programs seamlessly into the learning environment by focusing on meeting the needs of the child and complementing the learning experience.
- Create multiple pathways for learning that enable all students to attain postsecondary success.
- Create a vibrant statewide Career and Technical Education program through the creation of state of the art Programs of Study that integrate rigorous academic standards, prepare students

See the NEW IDOE Vision and Plan at:
<http://www.doe.in.gov/actionplan/index.html>